

"current flows from the B+ bus 38 through windings 46 and 48 and inductor 51 to charge capacitor 52 and returns to the B+ bus through capacitor 34".

In "explaining" why it is erroneous, Examiner asserts that:

"There is no potential difference along this path".

This assertion by Examiner is erroneous and demonstrates on part of Examiner an abject lack of skill in the art relevant hereto.

Contrary to Examiner's assertion, there are several potential differences "along this path". In particular, the main driving potential is the potential existing across energy-storing or filter capacitor 34; which, in turn, together with energy-storing or filter capacitor 36, gets its energy replenished from the power line by way of rectifier 27. Capacitors 34 and 36 are both described as filter capacitors, which -- to a person possessing ordinary skill in the relevant art -- clearly means that the capacitors store enough energy to provide useful filtering at a frequency of 120 Hz; which, in turn, means that the two capacitors may be regarded as constant-magnitude voltage sources for currents at the 20-30 kHz frequency of the inverter.

In other words, for purposes of analyzing the inverter circuit at the inverter frequency of 20-30 kHz, the three terminals associated with the two series-connected capacitors 34/36 may be regarded as a constant-magnitude center-tapped DC voltage source -- the center-tap being identified as 37.

Then, still attempting to "explain" his position, Examiner makes reference to another statement from the specification:

"since the current flowing through inductor 51 cannot change instantaneously, this current will now continue to flow from B- bus 39 through capacitor 68";

which statement Examiner terms "misleading", "explaining" his position by the following additional assertion:

"Positive current does not flow from a negative source using conventional accepted rules".

Assuming Examiner intends his term "negative source" to mean "negative terminal" (the term "negative source" has no meaning known to Applicant), this additional assertion by Examiner is also erroneous and again demonstrates on part of Examiner an abject lack of skill in the art relevant hereto.

Contrary to Examiner's additional assertion, there are numerous situations where positive current indeed flows from a "negative terminal" -- as for instance in each case where a storage battery is being charged.

And, the description termed "misleading" by Examiner involves exactly such a situation: the energy stored in inductor 51 discharges itself into the power supply; which is to say: for as long as it lasts, the inductive energy charges (i.e., returns to) the power supply (i.e., filter capacitors 34/36).

Then, Examiner makes a third assertion:

"The positive current and negative voltage infers a negative resistance or an active element. None are shown in the figure."

To Applicant, as it also would to a person possessing ordinary skill in the relevant art, this third assertion is (if interpreted charitably) erroneous.

First: "positive current" flowing into a "negative voltage" does not axiomatically imply a "negative resistance" -- rather, it might (as indeed is the case here) imply energy storage or reactive circuit components.

Second: Applicant's Fig. 2 does show active elements: transistors.

An altogether different argument against Examiner's objection to the specification relates to the fact that the very same specification has been found acceptable by several other examiners. In particular, the very parts of the specification that Examiner objected to were found acceptable in connection with U.S. Patent No. 4,677,345 (see column 4, lines 67-68 and column 5, lines 1 and 10-12); which Patent was prosecuted in the very same Art Group (266) as that of Examiner.

In summary, Applicant rejects Examiner's objection to the specification as being based in Examiner's own grossly inadequate understanding of the art pertinent to the proper understanding of the specification. In other words, as clearly demonstrated by above arguments, Examiner lacks the skill required to properly understand the specification and therefore lacks the skill required to properly examine instant application.

#### In re "112" Rejection of Claims 1-8

Examiner rejected claims 1-8 under 35 U.S.C. 112, first paragraph.

Applicant traverses these rejections for the following reasons.

(a) The U.S. Patent Laws do not authorize rejection of claims under 35 U.S.C. 112, first paragraph.

(b) The arguments presented above in connection with Examiner's objection to the specification obviate Examiner's basis for rejecting claims 1-8 under paragraph 112.

In re "112" Rejection of Claim 5

Examiner rejected claim 5 under 35 U.S.C 112, fourth paragraph, for failing to further limit the subject matter of a previous claim.

Applicant accepts this rejection and cancels claim 5.

In re "103" Rejections of Claims 1-8

Examiner rejected claim 1-8 under 35 U.S.C. 103 as being unpatentable over Skwirut et al ("Skwirut") in view of Anderson '751 ("Anderson").

Applicant traverses these rejections for the following reasons.

(d) Examiner's position is that -- in order to improve the utility of Skwirut's lighting unit -- it would have been obvious to a person of ordinary skill in the relevant art to search for and apply teachings like those of Anderson in such exact manner as to attain the claimed invention as it is specifically defined.

In supporting this position, Examiner states that:

"the teachings mention the use of high frequency for operating a fluorescent lamp";

by which Applicant believes Examiner means to refer to Skwirut's column 12, lines 32-41, where Skwirut states that:

"if the ballast and other circuit components were physically separated from the fluorescent lamp and made part of a specially-designed lighting fixture ... then ... high-frequency converters ... can be used to increase the efficacy ... and make the lamp units per se even more compact and economical" [emphasis added].

Rather than being a suggestion to the effect that it might be advantageous to integrally combine a "frequency-converting power supply" with the screw-in lamp unit itself, this statement by Skwirut in fact suggests the opposite: namely that it would not be feasible to combine a "frequency-converting power supply" within the screw-in lamp unit: otherwise, Skwirut would not have expressly suggested that such "high-frequency converters" be "physically separated from the fluorescent lamp and made part of a specially-designed lighting fixture".

Thus, Examiner has not provided sufficient evidence to the effect that it would have been obvious to a person of ordinary skill in the art relevant hereto to seek to modify Skwirut (with teachings like as those of Anderson) in such exact manner as to attain the claimed invention as it is specifically defined. In fact, in view of Skwirut column 12, lines 32-41, Examiner has provided evidence of the exact opposite.

(e) At the time of his invention (Feb. 13, 1979), Skwirut must be presumed to have been aware of the teachings of Anderson (published on Nov. 10, 1977). Yet, Skwirut -- being by law required to disclose the best mode of his invention -- did not even suggest, much less disclose, the incorporation of the Anderson teachings with his (i.e., Skwirut's) Screw-in Type Fluorescent Lamp. This fact constitutes additional evidence to the effect that a person possessing ordinary skill in the art (and Skwirut must be presumed to be such a person) did not see an obvious advantage associated with incorporating teachings such as those of Anderson into his own invention.

(f) The Skwirut patent was published after the date of Applicant's invention; which would make it entirely unlikely that a person of ordinary skill in the art (other than Skwirut) could have made any improvements thereon. Hence, before the time of Applicant's invention, no such person -- except possibly for Skwirut -- could possibly have found the claimed invention to be obvious.

(g) The fact that the Skwirut patent belongs to a totally different set of patent classifications as compared with those of the Anderson patent -- not even having any common classifications within their Fields of Search -- is additional evidence to the effect that the combination of Anderson with Skwirut constitutes an arbitrary combination arrived-at merely on the basis of the claimed invention.

(h) Applicant herewith testifies to the following:

"During 1976, which is well before the filing date of the Skwirut patent, Applicant confidentially disclosed to Westinghouse (the owner of the Skwirut patent) details with respect to a fluorescent lamp combined with a special electronic ballast, the combination being suitable as a direct substitute for the regular Edison-type incandescent lamp. One of the co-inventors identified on the Skwirut patent -- namely Ed Morton -- was among those to whom Applicant made this disclosure.

(i) Claim 7 expressly defines a feature wherein the power supply means comprises:

"half-bridge inverter means".

This feature is neither described nor suggested by either of the applied references.

In re "102" Rejection of Claim 6

Examiner rejected claim 6 under 35 U.S.C. 102(e) as being anticipated by Skwirut.

Applicant traverses this rejection for the following reasons.

(j) Claim 6 defines a feature including:

"a series-combination of an inductor and a capacitor ... constituted such as to exhibit series-resonant action at or near the fundamental frequency of the AC output voltage".

This feature is neither described nor suggested by Skwirut.

In "explaining" his position, Examiner asserts that Skwirut teaches "a series combination of a choke and a condensor (an inductor and a capacitor), across the output of the power supply, being in series resonance at or near the fundamental frequency" [emphasis added].

This assertion by Examiner constitutes manifest evidence to the effect that Examiner does not possess ordinary skill in the art to which the claimed invention belongs.

First: there is no mention whatsoever in Skwirut to the effect that his "choke and condensor" are "in series resonance at or near the fundamental frequency".

Second, a person possessing ordinary skill in the art relevant hereto would know that a gas discharge lamp simply can not feasibly operate when connected in parallel with a capacitor that is resonant with the lamp's ballast choke when the frequency of operation is 60 Hz (which it is in the Skwirut arrangement). For such kind of operation to be feasible, it is absolutely necessary for the frequency of operation to be so high that the half-period of the voltage applied to the lamp be no longer than comparable with the ionization time-constant of the gas within the gas discharge lamp. Typically, this time-constant is on the order of 15 micro-seconds; which means that the frequency must be on the order of 30 kHz -- although, frequencies as low as 15 kHz would be reasonably acceptable.